DOCUMENT RESUME

ED 395 578 IR 017 890

AUTHOR Marshall, Gail
TITLE The ABC's of Today's Technology Decision-Making in Australia, the United Kingdom, and the United States.
PUB DATE Jul 95
NOTE 7p.; Paper presented at the World Conference on Computers and Education (July 1995).
PUB TYPE Reports - Descriptive (141) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Accountability; Comparative Analysis; Decision Making; *Educational Technology; Foreign Countries; *Global Approach; *Government Role; Integrated Learning Systems; *Student Evaluation
IDENTIFIERS Australia; *Barriers to Implementation; *National Policy; Policymakers; Technology Integration; United Kingdom; United States

ABSTRACT

There are many parallels among hindrances to information technology implementation in Australia, the United Kingdom, and the United States. All three countries face: (1) an increased call for accountability to government at all levels; (2) different ideas on how to assess student progress in technology-rich environments; (3) a "back to basics" fervor on the part of policymakers that runs counter to what established users have learned to do with technology; and (4) conflict over the increasing purchase of Integrated Learning Systems with government funds, since many feel that the use of such systems diminishes what can be accomplished with existing technology. A major dialogue between all constituent groups using information technology would be valuable. (Contains 12 references.) (Author/BEW)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED 395 578

The ABC's of Today's Technology Decision-Making in Australia, the United Kingdom, and the United States

Gail Marshall
Gail Marshall & Associates
7050 Washington Avenue
St. Louis, MO 63130 USA
Telephone: 314-721-2828
Fax: 314-721-0826
E-Mail: 74055.652@Compuserve.com
Theme: National Policy
Level: Professional Development
Topic: Evaluation and decision-making
Secondary Topics: Evaluation-formative/evaluation-summative

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
☐ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Gail Marshall

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

Abstract

Three major problems confront technology users in Australia, the United Kingdom, and the USA—(1) differing views about accountability and assessment; (2) a "backs to basics" fervor on the part of policy-makers that runs counter to what established technology users have learned to do with technology; and (3) conflict surrounding the increasing purchase of Integrated Learning Systems with government funds since, in the view of technology pros, the use of such systems diminishes what can be accomplished with the existing technology. This paper proposes a major dialogue among all constituent groups using Information Technology.

Introduction: Common Plans and Problems

When we talk about liberating the learner, we must recognize that our views of what will liberate the learner are the subject of controversy. For example, trends in Information Technology (IT) planning, implementation, and evaluation in Australia, the United Kingdom, and the United States show that computer-using educators in all three countries face an increasing call for accountability by local, state, and government authorities. They also face a "back to basics" thrust on the part of those local, state, and government agencies, and conflict about the process of planning, implementation, and evaluation of IT. A decade ago Davis (1) saw the parallels among the three countries' attempts at curriculum development and evaluation before IT became a major force in schools. So did Berlak and Berlak (2), who listed the major points of controversy (or dilemmas, as they called them) and who said that controversy over educational planning and policy-making increases when the economy is in trouble. Then calls for accountability and a "back to basics" approach increase. Those authors cautioned us that controversy about assessment techniques, and curriculum design and implementation has been the norm in Australia, the United Kingdom and the United States for several decades. Now, in the age of IT, the situation is no better. Possibly it is worse because in all three countries IT is being viewed by government decision-makers as an expeditious way to bring computerized drill and practice programs into classrooms in an effort to boost student achievement without investing in teacher training, curriculum development, or assessment. The IT programs, government decision-makers say, will take care of all those functions.

Examples of controversy surrounding the role of IT in the schools abound. Nicholson (3) has described the course of an Australian attempts to implement a course of instruction—including IT—in the Victoria schools, as well as the attempts to evaluate students' learning.

IR017890

The process was plagued by zigs and zags as educators and politicians became involved in the innovation--each with different agendas and different stakes in the final outcome. Benzie (4) has told a similar story about plans for IT curriculum development, implementation, and evaluation in the United Kingdom. Marshall (5) has shown that the problems that plagued pre-IT attempts at the implementation, institutionalization, and assessment of pre-IT instructional programs have yet to be solved and will plague the attempts to use IT on a wide-scale basis.

Today, in all three countries—Australia, the United Kingdom, and the United States—governments are poised on the brink of large-scale spending and large-scale policy-making. Given these plans for spending vast amounts of money targeted at IT (see Kondrake, (6) for a description of the United State's plans to spend over $ 10 billion in the next few years), and the consequent raising of the stakes for all participants in the IT arena, it behooves us to look at the issues.

Pre-IT Innovation Attempts: The ABC's of Innovation Problems

First of all, let's start with a look backward at what happened to previous educational innovation attempts. In the United States, the course of innovation has never been smooth. The same ABC's—accountability, "back to basics," and controversy about the programs and processes—were apparent as innovators attempted to introduce projects during the 1960's and 1970's just as they plague us today. For example, one reason a host of mathematics and science projects—SMSG, ESS, BSCS, and other projects based on the USA's response to the Sputnik launch—foundered because evaluators had difficulty documenting their value. The evaluations often used "traditional" standardized tests, tests that were geared more to assessing "basic number and science facts." Those measures were often used because the tests were the only ones approved by decision-makers, who were not favorably disposed to other equally valid tests that were not "traditional" but had a better chance to assess the gains in student progress that the innovations sought to bring about It should not be a surprise that the tests chosen because of political considerations often failed to pick up the complex mathematical and scientific thinking promoted by the innovative math and science programs. Follow Through, a major child development program designed to assist children raised in poverty, was plagued with similar problems in documenting its impact until Stallings et. al. (7) designed a sophisticated evaluation that charted the contribution of the many different models of Follow Through programs. Similarly, the Comprehensive School Mathematics Program (CSMP), which taught sophisticated number relations and concepts, as well as logic, probability and statistics as early as first or second grade, continually faced assaults from parents and school administrators on the impact of the program on their students. The fact there were assaults is ironic because evaluations of CSMP "graduates" (8) showed that students in the CSMP program out-performed their fellow students who followed a "traditional" mathematics program.

Those projects, and others such as Man, A Course of Study, also foundered because they departed from "the basics"—i.e., the traditional way of teaching which emphasized drill, the use of workbooks, and the teacher-dominated classroom. Parents and policy-makers were disquieted because the new curricula did not resemble the classrooms of their youth. Parents feared their children would not gain a competitive edge for college admissions and future careers if they were instructed by those programs. Policy-makers were afraid that if the innovative curricula did not deliver greater gains in achievement, they, the policy-makers, would face the ire of the electorate. As a result there was a contentious atmosphere surrounding innovations, so contentious that the National Science Foundation shut down Man, A Course of Study.

As a result of these moves, innovators—including school administrators, teachers, and program developers—learned a valuable lesson. The lesson—funding is fickle. So efforts at innovative school reform in the United States diminished during the 1980's only to gain momentum as IT was introduced in schools. In many cases, the design of educational activities in IT classrooms looked like educational activities promoted by the innovative programs of the 1960's and 1970's—open-ended lessons that were student-directed; lessons that featured problem solving in mathematics and science; lessons that encouraged inquiry. Colleagues in Australia and the United Kingdom tell similar stories of innovations that are slowly being dismantled by govenrment planners—vouchers being given to parents to send their children to "private" or non-government schools, and wholesale curricula and nationwide testing programs imposed by non-educators.

Accountability and IT

We can see that this focus on the types of open-ended inquiry and problem solving fostered in the context of IT might provoke problems in assessment. We are, after all, in spite of the call for alternative assessments, still using the same tests that failed to detect gains in students' achievement in innovative programs back in the '60's and '70's. We are, after all, departing once again from the "back to basics" instructional approach, so we might expect controversy about what has been happening in IT classrooms. It's entirely possible that the current level of controversy will increase as government funding increases. Let's heed Robert Stake's discussion of problems with innovative efforts more than 20 years ago:

> Most state accountability proposals call for more uniform standards across the state, greater pre-specifications of objectives, more careful analysis of learning sequences, and better testing of student performance. These plans are doomed. What they bring is more bureaucracy, more subterfuge, and more constraint on student opportunities to learn. The newly enacted school accountability laws will not succeed in improving the quality of education for any group of learners. (9)

Stake was right that large-scale accountability programs raised problems. The United States government has several large-scale testing programs—the National Assessment of Educational Progress (NAEP) that measures the extent to which students across the country succeed on tasks deemed appropriate for their age, grade, and ability level, for example. NAEP's Report Cards don't seem to make much of a difference in classrooms. Either school personnel don't read the reports, or they fail to change instructional practices in order to increase students' performance, or the goals are unattainable. Whatever the reason, few improvements are seen over the years that NAEP has been testing.

Now several states in the United States have been attempting to introduce alternative assessments. Their attempts look very much like the process described by Nicholson. Some states have abandoned their efforts a few years into the process; some states are continuing but floundering; while a few—California is a positive example—have been successful to a limited degree. But the less the tests look like "back to basics" topics and teaching, the greater the resistance. Since assessment is closely tied to instruction, the "back to basics" move will always play a major role in determining what gets assessed and how it gets assessed.

"Back to Basics" and IT

Let's make no mistake about it. "Back to basics" is a code phrase for drill and a move away from investigative learning practices. "Back to basics" is inherently appealing because—rightly or wrongly—many parents and school personnel believe that they learned by a

"back to basics" approach and ascribe their present day status to the basics. Similarly, the fact that "the basics"—reading, writing, and arithmetic—are best learned by drill and practice seems plausible. Slogans such as "Back to the basics" have great appeal. They're like the "99 and 44/100 percent pure" slogan of soap-makers and the "Winston tastes good, like a cigarette should!" commercials—they simplify a complex problem and introduce a "feel good" aura. "Back to basics" has a nostalgic echo—it's the good old way, it's traditional, it's the way this country rose to greatness.

In fact, as Raymond Callahan (10) tells us in *Education and the Cult of Efficiency*, a major impetus for "the basics" came about as a result of studies by efficiency experts working in industrial settings. The efficiency movement did not come about because any clear-cut superiority of instructional practices. In fact, research on the effects of drill in iT settings (11) shows no systematic comprehensive advantage for "the basics." And the call for "the basics" is a red herring. No one argues that reading, writing and arithmetic aren't necessary. But many of us would also add that art, music, studies of human-kind are also basic. We would say that given the failure of drill to demonstrate its superiority, and the call for higher order thinking skills for the 21st century, "back to basics" is a dead end. But it has a strong constituency among parents and policy-makers.

Testing conducted in a " basics" environment looks at very different issues from those investigated by educators favoring a more open, investigative approach to education. The differences are irreconcilable. If you believe in the structure and content of today's tests, you generally believe in "the basics." And if you believe in open, investigative learning, you are bound to believe that those tests will not adequately measure the depth and breadth of learning acquired through the learning situations provided, and needed in the 21st century.

An increasing source of controversy in all three countries is the government's sponsorship of Integrated Learning Systems over other forms of IT use. It is disheartening for technology pioneers who created complex tasks for students to see the reductionist approach to computers, the Integrated Learning System (ILS) approach—gaining favor. Computers have special features—features which are seldom capitalized on by the ILS designers—that make them excellent educational tools. Computers can present animated picture sequences, schematic drawings, and "microworlds"—all of which can present problems that were difficult to present with traditional educational media. Complex logic problems, for example, can be presented to students in age-appropriate ways via computer. Yet the ILSs seldom deal with logic in their course of instruction. The computer's ability to process and display data in the ways that Micro-based Labs do makes it an excellent tool to buttress the scientific investigative tradition of which all three countries are justifiably proud. Yet the ILSs seldom take advantage of these features. The computer's iterative ability makes it an ideal tool to teach number relations in a meaningful way—spreadsheets can help students learn powerful mathematical ideas—but ILS systems fail to make use of these tools.

The socio-dynamics of computer use also provide opportunities for fruitful educational exchanges from student to student (Turkel, 1985). Similarly teachers can look over students' shoulders as they work with computers and learn *how* they think as well as what they think in ways that are difficult in the traditional paper and pencil classrooms. But we have little evidence that says the spontaneous exchange of information, strategizing, and problem solving occurs in ILS classrooms. In fact, the computers in those settings drive students to work alone, work against the clock, and work on computer-driven lessons.

Looking to the Future

Now our governments *say* they want to bring our students into the 21st century, and our governments *say* they want to use technology to do that. But it is not clear that our governments mean what we mean when the talk turns to IT's use in classrooms. Our governments seem to be saying, "We want to provide education cheaply and computer ILSs say they can deliver and the cost may be cheaper than a teacher. So we'll go with computer-based ILSs."

Many of us say that the computer skills needed to fuel society's growth in the 21st century are not going to be acquired through drill use. Classifying, coordinating, hypothesis testing and confirming are not skills developed by ILSs, and there is no automatic shunt from drill to complex thinking. This means that any decision-making about computer use must be accomplished in the context of a "no holds barred" examination of the assumptions of all points of view, the merits of all the arguments, the worth of all the data, the implications for today and tomorrow's students, and the potential offered by all of the features of computers. Davis (1), in commenting on the issues on curriculum evaluation in Australia, called for "negotiations in a self-critical community"—i.e., a discussion that carefully and comprehensively examines all of the factors in a situation before opting to change or not to change. Davis said that schools need "influence" to change. They need site-based management of key features—hiring, scheduling, purchasing, curriculum-making before meaningful change will occur. We would add that schools need the will to change. Change is threatening, but if school staffs believe that the ways they use computers are valuable and that the way they're used makes a demonstrable, sustained, important impact on students, then schools should be encouraged to use them that way. We also think schools need models for change so that the exemplary practices of computer use—of which there are many—can be used to support well-grounded IT programs. But we also think that government programs for IT use that are not based on sound educational practices, on unambiguous data, but that are based on hidden agendas will diminish IT's impact and reduce the potential benefits to students—who will be the ultimate losers in the controversy.

References

1. Davis, E. (1981). *Teachers as Curriculum Evaluators*. Sydney: George Allen & Unwin.

2. Berlak, A. and Berlak, H. (1981). *Dilemmas of Schooling*. London: Meuthen.

3. Nicholson, P. (1993). CATS or catastrophe?—authentic assessment in Australian secondary schools. *The Computing Teacher, 21*,6, 18-21.

4. Benzie, D. (1994). The information technology agenda in the UK. *The Computing Teacher*. in press.

5. Marshall, G. (1994). Cautionary verses: Problems and prospects in achieving the aims of the computer revolution. A paper presented at the International Federation for Information Processing, WG 3.5, Philadelphia, PA.

6. Kondrake, M. (1992). The official word. *Macworld*,9,9 232 - 236.

7. Stallings, J. (1975). Implementation and child effects of teaching practices in Follow Through classrooms. *Monographs of the Society for Research in Child Development, 40*, 78, Chicago.

8. Herbert, M. (1981). *Evaluation Report 8-C-1: Preliminary Study of CSMP "Graduates."* St. Louis, MO: CEMREL.

9. Stake. R. (1973). Measuring what learners learn. In E. House (ed.) *School Evaluation: The Politics and Process.* Berkeley, CA: McCutchan Press.

10. Callahan, R. (1962). *Education and the Cult of Efficiency.* Chicago: University of Chicago Press.

11. Roblyer, M., Castine, W., and King, F. Assessing the impact of computer-based instruction. *Computers in the Schools, 5,* 3/4.

12. Turkel, S. (1985). *The Second Self: Computers and the Human Spirit.* New York: Simon & Schuster.